THE BACK UP LINE

The back up line is one of the most crucial components to combating any structure fire while protecting the safety of interior operations. The principle objective of the back up line is three-fold:

- To provide back up to the first engine crew in the event of a burst hoseline or pump failure
- To provide additional GPM to be used simultaneously with the first hoseline if fire conditions warrant its use

- To protect the means of egress for the interior crews during suppression activities

The Montgomery County Fire and Rescue Standard Operating Procedure for Safe Structural Firefighting Operations (24-07AMII) states that [the second due engine will ensure and expand upon the water supply as necessary for the first engine by connecting to the hydrant and improving the intake pressure of the first due engine, and/or lay out additional supply lines as necessary]. They are also responsible for advancing a hand line and backing up the first due engine. How that line is established is the discretion of the company officer.

Historically in our department, the back up line has been stretched from the first arriving engine. An alternative to providing the initial attack crew with the coverage of a back up line would be to have the line stretched from the engine of the second due company. This built in redundancy provides a degree of safety that serves to protect the initial attack crew in the event of:

- pump failure
- Supply line failure
- Water tank depletion

By stretching the second line from the engine of the back up company, a margin of safety is established by providing water from a separate booster tank and from a unit that is supplied directly from the hydrant. Of course, this method is only practical in instances of short lays (proficiency from company drills will enhance ones ability to place a long line in service in ample time).

The optimum position of the back up line should allow for protection of the initial attack company from a vantage point that permits them to preserve the means of egress while being close enough to be called up for support if warranted. In addition, a position of close proximity (outside the room of origin) will allow the back up company to observe conditions affecting the means of egress (exit routes and interior stairs) if the fire is on the first floor. If crews operating on upper floors are searching without the protection of a hoseline, the back up line protects the interior stairs after the initial attack line is engaged. If both, the back up crew and the initial attack crew were operating within the same room, who would protect their flank if fire spread beyond the initial attack crew?

In the event the initial attack company calls for the back up crew to move up and assist with fire attack, their flow must be matched or exceeded in order to

overwhelm and control the fire. The back up line should be, at minimum, the same diameter or larger than the initial attack line:

ATTACK LINE	BACK UP LINE
1”3/4	1”3/4 to 2”
2”	2” to 2”1/2

The additional flow from a back up line can turn a 150 GPM attack into a 350 GPM attack, significantly increasing ones ability to confine and extinguish a compartment fire.

In summary, as the back up company, please remember to:

- Listen to the on scene report for where the first crew is entering and what size line is being deployed.
- Match or exceed the size of the first line.
- Bring your own water when practical.
- Take a position inside that allows you to observe interior conditions and protect interior operations.

With the help of the back up line in place, we may never have to put the RIG in service!

References: Fredericks, Andrew, Stretching and Advancing Attack lines, Part 2, Fire Engineering, March 1997

Dunn, Vincent, Safety and Survival on the Fire Ground, Fire Engineering Books & Videos, 1992

KEEP IT SAFE!

“DEDICATION TO EDUCATION”